

**Notice of Allowability**

Application No.

10/004,039

Examiner

Jason Proctor

Applicant(s)

NEMECEK ET AL.

Art Unit

2123

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment and Arguments submitted 15 May 2006.
2. ☒ The allowed claim(s) is/are 1,5,6,8-13 and 15-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>11/28/05</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

**EXAMINER'S AMENDMENT and REASONS FOR ALLOWANCE**

Claims 1, 5, 6, 8-13, and 15-18 are allowed. Claim 14 is cancelled.

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Bryan Failing (57,974) on 8 August 2006.

The application has been amended as follows:

Claim 4 has been cancelled.

2. The following is an examiner's statement of reasons for allowance:

Applicants' arguments, in light of the claim amendments, both submitted on 15 May 2006, have been fully considered and have been found persuasive. While the prior art teaches emulation systems and methods, as well as watchdog timers and clock signals, these isolated teachings are insufficient to render the claimed invention obvious.

When interpreting the terminology in the claims, the specification cannot be ignored. In particular, the specification (page 9, lines 25-28) sets forth:

In preferred embodiments, a field programmable gate array FPGA (or other programmable logic device) is configured to function as the virtual microcontroller 220. The FPGA and virtual microcontroller 220 will be used interchangeably herein.

Art Unit: 2123

Therefore it appears unreasonable to interpret the phrase “virtual microcontroller” as broadly as, for example, software or a software program.

Therefore, none of the references taken either alone or in combination with the prior art of record disclose a system or method specifically including:

(Claim 1) a microcontroller, a virtual microcontroller running in lock-step synchronization with the microcontroller, and a gatekeeper circuit wherein the gatekeeper circuit further comprises switching means for replacing the microcontroller clock signal with the gatekeeper clock signal for clocking the virtual microcontroller when a watchdog event occurs,

(Claim 11) determining that a watchdog timer event has occurred in a microcontroller, the microcontroller running in lock-step synchronization with a virtual microcontroller, and providing a gatekeeper clock signal to the virtual microcontroller in place of a microcontroller clock signal,

(Claim 15) determining that a watchdog timer event has occurred in a microcontroller, the microcontroller running in lock-step synchronization with a virtual microcontroller, and switching a microcontroller clock signal from the virtual microcontroller and replacing the microcontroller clock signal with a gatekeeper clock signal to the virtual microcontroller,

in combination with the remaining elements and features of the claimed invention. It is for these reasons that Applicants’ invention defines over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

Art Unit: 2123

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

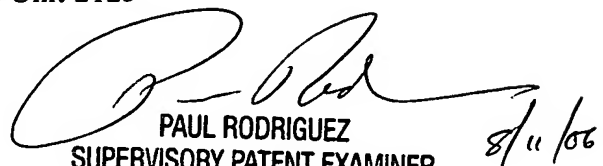
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor  
Examiner  
Art Unit 2123

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PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
8/11/06